THE

AGRICULTURAL ADVISORY DEPARTMENT

IMPERIAL COLLEGE OF TROPICAL AGRICULTURE.

IMPERIAL MYCOLOGICAL
2 NOV. 1936
INSTITUTE

REPORT

ON THE

Agricultural Department

ST. KITTS-NEVIS

1935.

ISSUED BY

THE COMMISSIONER OF AGRICULTURE

IMPERIAL COLLEGE OF TROPICAL AGRICULTURE.

1936.

[Price Sixpence.]

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Agricultural Instructor, Anguilla	E. O. R. Lake.
Assistant Clerk	F. S. Delisle.

Letter of Transmittal

10th August, 1936.

C.A. 861/36.

Sir,

I have the honour to transmit herewith the annual report of the Agricultural Superintendent on Agriculture in the Presidency and the work of the Agricultural Department during the year 1935.

2. The total export value of the products of agriculture and related industries amounted to £255,601 in 1935, being only slightly less than the corresponding figure for 1934 and equal to the average of the corresponding figures for 1934 and 1933.

3. The sugar crop of 1933-35, reaped in 1935, reached the record figure of 28,491 tons of raw sugar, with an average yield in the Island of St. Kitts of 25.25 tons of cane per acre. For the fourth consecutive year the average yield has been slightly greater or less than 25 tons per acre. The chief factor responsible for maintaining this level of production has been the series of fairly good rainfall years. A relatively higher standard of sugar cane production may however reasonably be anticipated in the future by the adoption of more suitable cultural and manurial practices; by the cultivation of better varieties suitably allocated; by reduction of the damage inflicted by the major pest, the small moth borer, by means of biological control; and by the high standard of efficiency in manufacture attained by the St. Kitts (Basseterre) Sugar Factory.

4. Further field surveys were conducted by Mr. H. E. Box, Entomologist, during the year to determine the extent of control of the small moth borer of sugar cane effected by the recently introduced parasite, *Lixophaga diatraeae*. Mr. Box reported that a very high degree of biological control had been effected, and that simultaneously with the progressive annual increase in parasitism there had been a steady decrease in borer infestation from 20.6% in 1932 and 20.9% in 1933 to 8.0% in 1935.

5. Weather conditions in 1935, and in particular the distribution of rainfall, were somewhat less favourable for maintaining as high an average yield per acre in the 1936 sugar crop as was obtained in the 1935 crop.

6. As the result of the slight improvement in market conditions which had taken place late in 1934 and early in 1935, a greater area than in recent years was planted with Sea Island cotton, the only other major industry of the Presidency. The following comparison of the exports of cotton lint, and their corresponding values, for the cotton crops of 1935, 1934 and 1933, demonstrate the extent of the recovery that has been effected in the cotton industry :—

1933	88,550 lb.	£ 4,701
1934	166,910 lb.	£ 7,324
1935	204,647 lb.	£10,327

7. In the Island of Nevis drought conditions were abnormally prolonged in the first half of the year and reacted unfavourably on agricultural production. These conditions, together with the low market values of the major crops, sugar cane and cotton, have combined to retard agricultural progress. Little real progress however will be attained in Nevis until a better standard of agriculture is reached and maintained.

8. The live stock industry of Nevis was formerly of considerable importance, but in recent years the demand in the other Islands for Nevis stock has declined. The industry is suffering from lack of capital and organization, and serious losses are sustained annually in the dry season owing to shortage of water and fodder.

9. In an appendix to the report the Agricultural Superintendent has summarised the position in regard to land settlement in Nevis. Agricultural development on the Low Ground settlement has been disappointingly slow, and during the year little attempt would appear to have been made to adopt agricultural methods of even moderate standard. The extension and organization of the pasturage on the Low Ground settlement need early attention. At Hamilton, satisfactory progress has been made, in the initial stages of settlement, during the year.

10. The Island of Anguila experienced abnormally dry conditions throughout the year, and all agricultural production was, in consequence, seriously affected.

11. The sugar cane experimental work, conducted in co-operation with the sugar cane Investigation Committee of St. Kitts under the direction of Mr. P. E. Turner, Sugar Cane Agronomist, was continued during the year. Owing to its delayed issue, the results of the experiments reaped in the crop of 1935 were included in the annual report for 1934, and therefore only a summary of the results is reproduced in this report. The work involved in carrying out the programme of sugar cane experiments constitutes the major function of the Agricultural Department as at present organized.

12. Other activities of the Department include the production of pedigree cotton seed of the St. Kitts type of Sea Island cotton. This work has been carried on satisfactorily during the year.

I have the honour to be,

Sir,

Your obedient servant,

C. C. SKEETE,

Acting Commissioner of Agriculture.

His Honour,
The Administrator,
ST. KITTS-NEVIS, B.W.I.

Report of the Agricultural Department, St. Kitts-Nevis

For the Year ended 31st December, 1935.

SECTION I.

AGRICULTURE IN THE PRESIDENCY.

METEOROLOGY.

The following are abstracts of the meteorological observations recorded at the Experiment Station, La Guerite, during 1935.

During the year 1935 the highest temperature recorded was 91° F on the 8th September, while the lowest was 67° F on the 23rd and 28th January. The mean shade temperature for the year was 78.7° F. The total rainfall was 41.75 inches as compared with 52.20 inches in 1934 and 59.32 in 1933. Rain fell on 185 days of the year.

The average rainfall of the island for the year was 48.89 inches as compared with 55.34 in 1934 and 63.97 in 1933. The average of the island for twenty-two years is 55.17 inches so that the rainfall for 1935 is 6.28 inches below the average. The average rainfall for the year of the Northern or wet district of the island is 57.73 inches and of the Valley or dry district 41.32 inches. The total average rainfall from January to June inclusive was 13.93 inches, or 6 inches below normal, and from July to December inclusive 34.96 inches as compared with 35.22 inches for the period 1914-1935.

The sugar cane and cotton crops suffered from the drought during the first half of the year and the low rainfall for the year affected the growth of the 1936 cane crop, especially in the Valley district.

SUGAR.

Weather conditions in 1934 were not altogether favourable for the growth of the sugar cane. The rainfall for the year was about equal to the average during the past twenty-one years but the distribution was not satisfactory. The period January to July was very dry and the canes received a severe check in growth by the very low rainfall of October.

The total area in sugar cultivation in St. Kitts during the year was approximately 11,000 acres and the area reaped according to the returns supplied by estates was 8,100 acres as against 7,600 acres in 1934. Growers supplied

205,192 tons of cane to the St. Kitts (Basseterre) Sugar Factory, equivalent to a yield of 25.25 tons of cane per acre as against a yield of 26.23 tons of cane per acre in the previous year. The output of the Factory was 28,491 tons of grey crystal sugar, about 170 tons more than the output of 1934. The yield of sugar per acre was 3½ tons, which is quite satisfactory. The sugar was sold at an average price of £8 16s. 10d. per ton f.o.b., the lowest figure ever reached since the erection of the Factory. Contracting growers received a first payment of 14/- per ton for their canes and a deferred payment of 10.84d making the price for canes 14s. 10.84d per ton.

The production for the past ten years is shown in Table I.

TABLE I.

SUGAR—ST. KITTS.

Year	Average Rainfall for island previous year. Inches	Acreage reaped Acres	Tons of cane produced	Tons cane per acre	Tons of sugar produced	Tons sugar per Acre
1926	43.54	6,769	143,177	21.23	16,290	2.41
1927	62.57	6,425	164,928	25.67	18,067	2.81
1928	64.36	6,770	162,829	24.09	19,443	2.87
* 1929	53.25	6,950	120,106	17.32	13,724	1.97
1930	52.55	6,883	150,737	21.98	18,680	2.71
1931	45.98	6,096	98,209	16.11	12,021	1.97
1932	57.60	6,537	164,259	25.13	19,969	3.05
† 1933	77.27	7,715	184,538	24.27	24,167	3.13
1934	63.97	7,630	200,211	26.23	28,320	3.62
1935	55.34	8,105	205,192	25.25	28,491	3.52

* Crop damaged by hurricane of September, 1928.

† Crop damaged by gale of September, 1932.

According to the Customs returns the exports of sugar, molasses and syrup during the period 1926-1935 were as shown in Table II.

TABLE II

SUGAR—EXPORTS AND VALUES.

Year	Sugar		Molasses		Syrup		Prices Grey Crystals f.o.b. per ton
	Exports Tons	Value £	Exports Gals.	Value £	Exports Gals	Value £	£ s. d
1926	15,651	210,385	377,913	4,389	17,809	641	13 7 1
1927	17,363	282,784	489,925	2,834	41,750	2,000	16 14 7
1928	18,610	264,490	339,340	1,710	34,473	1,336	14 18 0
1929	12,736	150,153	—	—	8,970	299	11 16 4
1930	17,637	178,654	—	—	7,877	263	10 6 2
1931	10,579	110,234	589,690	5,759	—	—	9 10 2
1932	19,327	187,347	459,404	1,197	250	5	9 17 9
1933	22,588	234,747	630,749	2,897	—	—	9 18 3
1934	27,415	252,986	709,443	2,118	20,547	765	9 3 5
1935	27,280	236,964	453,999	5,126	31,248	1,106	8 16 10

It will be noted from Table I that during the past three years the acreage under cane has been increased by about twenty per cent. and also that, chiefly as a result of favourable weather conditions, the yields of both cane and sugar have been maintained at a fairly high level. The high standard of work at the St. Kitts (Basseterre) Sugar Factory, control of the small moth borer by the Cuban fly and high quality juices were contributing factors to the increased yield of sugar. In St. Kitts the weather is the most important limiting factor to crop production and in years of well distributed rainfall and in the absence of hurricanes high yields will generally be obtained, but in periods of drought with poorly distributed rainfall yields quickly fall to a very low level, especially in the Valley district.

The provision of suitable varieties for the dry and wet areas of the island is also a very important matter and here the industry is dependent chiefly on the Central Sugar Cane Breeding Station at Barbados. The new variety B.2935, which has given very promising results in experimental trials, should be of considerable value to the dry areas of the island.

During the past two or three years the Management of the St. Kitts (Basseterre) Sugar Factory has given much attention to the improvement of the type of cart used for transporting canes and a very useful cart with rubber tyred wheels has been evolved. The estates have also been investigating the possibilities of adopting some system of mechanical haulage to assist their animals during the peak periods of crop and several estates are now making trials with motor trucks.

At the commencement of the 1935 crop there was some trouble with the labourers which caused delay in starting the crop. It appears that political agitators were at the bottom of the trouble and that there was little dissatisfaction among estate labourers.

An important event of the year was the investigation undertaken, at the request of the Government, by Professor C. Y. Shephard of the Imperial College of Tropical Agriculture, Trinidad, in connexion with the dispute between the St. Kitts planters and the St. Kitts (Basseterre) Sugar Factory. Professor Shephard was requested "to enquire into the terms of the present contract be-"tween St. Kitts and Nevis Sugar Factory and Planters having regard to labour "and other costs of efficient production of cane and manufacture of sugar re-"spectively and to recommend for consideration of the several parties any modi-"fications which appear desirable in the interests of St. Kitts and Nevis Sugar "Industry as a whole." The investigations in St. Kitts and Nevis were carried out between 14th May and 1st June, 1935, and no doubt Professor Shephard's findings will be given very careful consideration by the Planters and by the Directors of the St. Kitts (Basseterre) Sugar Factory Ltd.

INVESTIGATIONAL WORK.

During the year the Department continued to conduct experiments on behalf of the industry in co-operation with the Sugar Cane Investigation Committee and a summary of the conclusions of the 1935 experiments is given in Section II of this report.

From Table III it will be seen that importations of artificial manures have increased considerably during the past three years.

TABLE III

ARTIFICIAL MANURES IMPORTED INTO ST. KITTS DURING PERIOD 1926—1935.

Year	Sulphate of Ammonia.	Sulphate and Muriate of Potash	Superphosphate of Lime.	Mixed Manures (complete)	Total
	tons	tons	tons	tons	tons
1926	416	—	—	—	416
1927	521	—	—	—	521
1928	566	—	—	—	566
1929	331	—	—	—	331
1930	457	—	—	—	457
1931	707	—	—	—	707
1932	703	—	—	—	703
1933	880	38	—	161	1079
1934	1118	116	—	80	1314
1935	1652	235	66	55	2008

Investigations in connection with the biological control of the small moth borer were continued by Mr. H. E. Box, F.R.E.S., Entomologist, and in a report

on the results of a Lixophaga survey of cane fields in St. Kitts conducted in June, 1935, Mr. Box stated that "simultaneously with the progressive annual "increase in parasitism there has been a steady decrease in borer infestation "from 20.6% in 1932 and 29.9% in 1933 to 8.0% in 1935."

NEVIS.

There is a small sugar industry in Nevis and the acreage under sugar cane is estimated at 1,000 acres. The industry is almost entirely in the hands of the peasants, who cultivate small plots of cane on their own land or on estates' land on the share system. On the whole the cultivation is poor and low yields are obtained. The Department is endeavouring to improve the peasants' cultivation and the yields of cane by demonstration plots on the land settlement estates and by the introduction of the best varieties.

Muscovado sugar and syrup are manufactured locally and canes are sold (at 10/6 per ton at the jetty) for shipment to the St. Kitts (Basseterre) Sugar Factory. The following quantities of canes were sent from Nevis to St. Kitts during the past three years:

1933	2,110	tons
1934	4,139	„
1935	2,429	„

Owing to the improvement in the market for sea island cotton there will probably be a reduction in the acreage under sugar cane in Nevis.

31,248 gallons of syrup valued at £1,106 were exported during the year.

COTTON.

In St. Kitts the cotton crop is planted from the 1st March and during the period March to June, 1935 the weather was very dry and unfavourable for satisfactory growth of the cotton crop. In some fields the plants were stunted and yields were low.

In Nevis the cotton crop is planted from the 1st October. For the 1934-35 season planting was delayed as the weather in October was very dry, but good rains fell in November and December. The weather during the first quarter of 1935 was dry.

In Anguilla the 1934-35 cotton crop was planted from the 15th August, 1934 and the weather during the season was favourable for the growth of the crop.

The production for the past ten years is shown in Table IV.

TABLE IV.

COTTON

Year.	Area planted in Sea Island Cotton.				Total Lint production in lbs.				Yield of Lint per acre in lbs.		
	St. Kitts.	Nevis.	Anguilla.	Total.	St. Kitts.	Nevis.	Anguilla.	Total.	St. Kitts.	Nevis.	Anguilla.
1925-26 ...	2,200	1,500	240	3,948	279,340	104,400	4,000	387,740	127	70	–
1926-27 ...	1,774	870	70	2,714	247,220	160,000	...	407,220	140	130	–
1927-28 ...	1,000	1,500	64	2,564	149,070	407,000	22,000	578,070	150	271	–
1928-29 ...	1,400	1,500	300	3,900	327,300	274,000	51,000	652,300	230	109	170
1929-30 ...	2,200	2,500	300	4,200	397,763	80,000	27,000	504,763	180	40	90
1930-31 ...	1,170	1,500	300	2,970	129,900	159,000	32,200	321,100	111	106	107
1931-32 ...	200	250	218	668	35,140	23,737	26,141	85,018	176	95	120
1932-33 ..	140	100	134	374	20,352	10,042	18,767	49,161	143	100	140
1933-34 ...	253	600	280	1,133	59,129	47,677	34,881	141,687	234	80	124
1934-35 ...	400	800	250	1,450	101,869	72,603	27,570	202,042	255	90	110

It will be noted that during the past two seasons the acreage under cotton has been increased and it is likely that, as a result of the improvement in the market for sea island cotton, there will be further increases of the area under this crop.

During 1935 the late planted fields in St. Kitts were severely damaged by the pink bollworm (Pectinophora gossypiella) but the damage to early fields was not serious. A few fields had to be dusted with paris green for the control of the leaf worm (Alabama argillacea). On some estates stainers were seen earlier and were more plentiful than in recent years.

In Nevis the 1934-35 crop was severely attacked by the leaf worm, the pink bollworm and stainers. Recently the peasants have not been cleaning up their cotton plots satisfactorily and in future the cotton control ordinances will have to be rigidly enforced.

In Anguilla the crop was damaged by the pink bollworm.

According to the Customs returns the exports of cotton lint, cotton seed and cotton seed oil during the period 1926-1935 were as shown in Table V.

TABLE V.

COTTON—EXPORTS AND VALUES.

Year	Cotton Lint		Cotton Seed		Cotton Seed Oil.		Prices
	Exports	Value	Exports	Value	Exports	Value	Cotton Lint (St. Kitts) c.i.f. per lb.
	lbs.	£	Tons	£	Gals.	£	s. d.
1926	416,850	44,169	147	721	—	—	2 9
1927	387,167	35,205	122	540	—	—	1 8
1928	438,552	36,038	138	596	—	—	2 5
1929	690,068	66,407	383	1317	—	—	2 0
1930	778,761	65,484	364	1837	12,272	932	2 6½
1931	245,511	12,364	388	1363	9,489	425	1 0 to 1 10
1932	127,444	5,961	35	290	2,657	224	10 to 1 2
1933	88,550	4,701	—	—	—	—	1 1
1934	166,910	7,324	—	—	7,298	442	1 3 to 1 4
1935	204,647	10,327	2	16	5,995	533	1 5 to 1 8

It will be seen that there has been a large increase in the value of cotton lint exported since the low value reached in 1932 and that the price of lint is about 50 per cent higher than it was in 1933. The efforts of the West Indian Sea Island Cotton Association and the Advisory Committee in England have no doubt contributed largely to the present improved condition of the cotton market.

MINOR INDUSTRIES.

COCONUTS

There is a small coconut industry in Nevis and the area under coconuts is estimated at 800 acres.

The exports of coconuts and copra during the past ten years are given in Table VI.

TABLE VI

COCONUTS—EXPORTS AND VALUES

Year	Coconuts		Copra	
	Exports	Value	Exports	Value
	No.	£.	lbs.	£
1926	108,300	1,145	..	..
1927	298,369	2,400	3,360	41
1928	312,648	2,040	5,912	72
1929	1,668	10	..	..
1930	16,144	100	553	7
1931	43,900	256	..	..
1932	78,770	445	16,480	215
1933	56,953	208	23,520	98
1934	105,646	228	58,800	223
1935	95,157	215	8,440	26

A large number of coconut trees were destroyed by the severe hurricane of 1928 and the value of the exports fell considerably from 1929.

PROVISION AND MARKET GARDEN CROPS.

A fairly large acreage of ground provisions (sweet potatoes, yams, tannias, cassava, peas, beans, corn etc.) is grown each year in the three islands of the Presidency and in most years there is a plentiful supply of these provisions which form an important part of the diet of the labouring population.

In Nevis and Anguilla these crops are usually grown on plots of land owned by the peasants, but in St. Kitts they are cultivated by the labourers on land provided by the estates or on rented land. Large quantities of ground provisions from Nevis find a ready market in St. Kitts.

In recent years the production of market garden crops (tomatoes, cabbages, carrots, turnips, beet etc.) has greatly increased and during the greater part of the year the supply of fresh vegetables is good. The efforts by Government to develop an export trade in fresh vegetables with Canada during the winter months have not met with much success but small shipments of tomatoes continue to be made each year by the Nevis peasants. The tomatoes are exported through the Government packing house where they are graded and packed under the supervision of the Agricultural Instructor. The quantities of tomatoes exported during the period 1932-35 are given below.

	Lbs.	Value
1932	58,590	£524
1933	28,637	221
1934	14,000	105
1935	15,880	120

LIVE STOCK.

The live stock industry continues to be of some importance to Nevis but there is no progress to be recorded during the year. Little attention is given to the maintenance of pastures and many animals deid during periods of drought, as few attempts are made to reserve supplies of food for the animals during such periods.

During the year the two pure bred Zebu bulls owned by Government were maintained in satisfactory condition. One was stationed on the land settlement estates and the other was moved to different estates around the island. The introduction of these bulls has greatly improved the type of working cattle on the island but one of the animals should soon be replaced, as he is now fairly old and there is danger of too much interbreeding. There is also a privately owned pure bred jack on service in the island. The efforts by Government to improve the type of sheep by the introduction of two pure bred Persian rams were not successful as both animals died after being in Nevis only for a short time.

A pure bred Jack has recently been imported into St. Kitts by an estate owner and the pure bred Berkshire boar owned by the Government continued to do good service during the year in Anguilla.

The exports of live stock during the past ten years are given below.

	Number	Value
1926	803	£3,107
1927	1,008	3,586
1928	561	1,708
1929	427	770
1930	473	1,544
1931	796	3,107
1932	1,185	2,636
1933	971	2,325
1934	762	796
1935	751	925

AGRICULTURAL EXPORTS.

The following table shows the chief agricultural products exported during the years 1933, 1934 and 1935.

Article	1933.		1934.		1935.	
	Quantity	Value £	Quantity	Value £	Quantity	Value £
Sugar, crystals	22,588 tons	234,747	27,415 tons	252,986	27,280 tons	236,964
Syrup and Molasses ..	630,749 gals	2,897	709,443 gals	2,118	485,247 gals	6,232
Sugar, musco.	—	—	10 tons	106	2 tons	36
Cotton, lint .	88,550 lb	4,701	166,910 lb	7,324	204,647 lb	10,327
Coconuts ..	56,953	208	105,646	228	95,157	215
Copra	23,520 lb	98	58,800 lb	223	8,440 lb	26
Salt	34 tons	9	1,302 tons	2,056	2,015 tons	2,188
Tomatoes ..	28,637 lb	221	14,000 lb	105	15,880 lb	120
Vegetables ..	—	389	—	388	—	327
Fruit	—	63	—	—	—	20
Sweet Potatoes	—	—	6,240 lb	26	29,630	86
Tamarinds ..	—	—	5,500 lb	23	2,625	12
Ginger	—	—	408 lb	11	—	—
Hides & Skins..	—	276	—	140	—	311
Horses	32	290	22	139	15	105
Mules	121	975	17	90	25	256
Asses	103	131	65	64	35	29
Cattle	158	595	50	176	47	222
Sheep	330	180	445	230	494	227
Goats	78	39	43	21	86	45
Swine	149	115	120	76	49	41

(Figures supplied by Customs Department).

SECTION II.

Report of the Agricultural Instructor, Nevis.

For the Period 1st January to 31st December, 1935.

WEATHER CONDITIONS.

The rainfall at the Experiment Station for the year amounted to 44.53 inches, which was 9.53 inches less than that of 1934. Rain fell on 118 days during the year and the heaviest fall recorded for any one day was 1.30 inches which occurred on October 14th. Only 12.67 inches of rain fell during the first half of the year and this was insufficient for satisfactory growth of the crops. The sugar cane crop was seriously affected. The rainfall during the latter part of the year was more satisfactory and was adequate for the crops planted at this time of the year.

SUGAR CANE.

The total acreage under sugar cane was about 1,000 acres, which was about 100 acres more than that of last year. About 50 per cent of the crop was planted in B.H.10(12) and the remainder in mixed varieties. The White Transparent cane is being replaced by B.H.10(12) and other more suitable varieties. There should soon be a fair acreage of the new Barbados seedling B.2935, which is reputed to be a good drought resister.

A part of the crop was made into muscovado sugar at the local mills and the remainder sold to the St. Kitts (Basseterre) and Cane Garden factories. The total quantity of canes sold is as follows:—

St. Kitts (Basseterre) Factory	4,316 tons
Cane Garden Factory	827 „

The canes sold to the Cane Garden Factory were made into syrup, of which 19,561 gallons were exported to Canada.

The acreage planted for the 1936 crop will be about the same as that for 1935. The fields planted in November and December have germinated fairly well, but there is quite a large acreage which will not be planted until early in 1936, when a large quantity of plants are available during the reaping of the crop. On the Land Settlements cane nurseries have been established by the Agricultural Department so that a large supply of planting material may be available in November and December and early planting facilitated.

Pests and Diseases. The crop was not seriously affected by any pests or diseases during the year, and the small moth borer, which usually does a great deal of damage to the crop, was not plentiful this year.

COTTON.

The 1934-35 cotton crop was all reaped by the end of May, 1935, and the total production was 72,603 lb. of lint from about 800 acres, being at the rate of 90 lb. of lint per acre.

Practically the whole of the 1935-36 crop was planted during the early part of October. The total acreage planted was estimated at 2,000 acres and on the greater part of this area hand picked seed supplied by the Agricultural Department was used. The distribution of planting seed direct from the ginneries without hand selection militates against any efforts which are being made to improve or even maintain the quality of the cotton grown in the island. The seed germinated well and the weather following has been very favourable.

Pests. Pink Bollworm. There was only a slight attack of the pink bollworm.

Leaf Worm (Alabama) There were several attacks of the leaf worm, but only in a few instances was there any serious damage, as the pest was dealt with very promptly. This control was made possible by the credit of Paris Green and Lime allowed to the peasants by the Government this season. One hundred and eighteen peasants were supplied with Paris Green and Lime on credit this season and the total amount supplied was as follows:—

Paris Green	693 lb.
Lime	25 bags.

Cotton Stainer. This pest has been troublesome in certain parts of the island, and it has been gradually increasing during the past two or three years. It is difficult to account for this increase as the island is fairly well cleared of native food plants, and it is believed that the stainers subsist on seed kept for planting which might not have been properly stored or allowed to be scattered around the seed house.

The cleaning up of the cotton fields has been more satisfactory this season, and the appointment of a whole-time officer as Cotton Inspector is contemplated.

The fumigation of cotton seed at the ginneries was carried out according to regulations.

MINOR INDUSTRIES.

COCONUTS.

The coconut plantations of the island continue to do fairly well. The trees are all in a healthy condition and the bearing is satisfactory. At Pinneys estate a part of the crop is made into copra for export and the total quantity of nuts and copra exported during the year was as follows:—

Dry Nuts	78,250
Copra	4 tons

It is estimated that it requires about 6,000 nuts to produce a ton of copra.

At the other plantations the crop is mostly sold in the local market.

LIVE STOCK.

There was no outbreak of Anthrax or any serious diseases among the live stock during the year, but there was a high mortality from lack of sufficient food

and water during the dry season. Each year an appreciable number of animals die from malnutrition, which could be prevented if the stock raisers made some effort to provide food and water in sufficient quantity to carry the animals through the dry season. Interest in stock raising is waning as the demand for live stock is steadily decreasing.

The two Government owned pure bred Zebu bulls continue in good health and condition. The older animal is stationed at the Low Ground settlement and the other is transferred for service from estate to estate.

GROUND PROVISIONS.

The usual ground provision crops such as sweet potatoes, yams, Indian corn, cassava and peas were grown during the year. On the whole the crops turned out fairly well and there was no shortage of locally grown food stuffs during the year.

There was an increase in the acreage planted in tomatoes and the crop was moderately good. The tomato crop is now regarded as an important minor industry and to most of the growers has proved remunerative. Moreover it is reaped and disposed of at a time when there is no other agricultural produce which the peasants can turn into cash.

Pests. The green bug (Nezara) did a great deal of damage to the late tomatoes.

THE EXPERIMENT STATION.

The hedges have been kept trimmed and in good order. In the nursery the raising of fruit trees and ornamental and shade trees was continued. There is an increased demand for grafted mangoes (Julie) and other fruit trees, especially by allotment holders on the Land Settlements.

Experiments with economic and food crops were carried out at the Station and seeds and cuttings of the varieties giving best results were distributed to growers.

DEMONSTRATION PLOT.

Three acres of land, rented from Bath Plain estate, are laid out in half acre plots on which it is planned to grow crops such as sugar cane, cotton, ground provisions and vegetables. These plots are grown with the object of providing a larger supply of planting material to meet the growing demands and also to demonstrate correct methods of cultivation. Accounts showing the cost of the various operations in connection with each crop are kept and also a record of the yields obtained. The peasants are particularly interested in these plots and often come to see the growing crops.

VEGETABLE NURSERY.

The nursery for raising vegetable seedlings was continued and seedlings from 15 lb. of tomato and 35 lb. of onion seed were raised and distributed during the year.

COTTON SELECTION.

Work on cotton selection was continued on the same lines as in the past.

PLANT DISTRIBUTION.

The plants, seeds and cuttings distributed during the year are shown below :

Ornamental plants and shade trees	153
Grafted Mangoes (Julie)	13
Budded Oranges	3
Cherimoya	5
Garden Grape	6
Golden Apple	2
Cane Plants	463,309
Sweet Potato Cuttings	2,300
Cassava Cuttings	590
Selected cotton seed, lbs.	37,471
Yams, lbs	933
Seed Corn, lbs.	28
Peas and Beans, lbs.	11
Tomato seedlings	165,250
Onion „	339,600
Egg Plant „	2,160

AGRICULTURAL EDUCATION.

School Gardens. The work on the school gardens is on the whole very unsatisfactory and generally the teachers appear to neglect this branch of work.

Advisory Work. The Agricultural Instructor pays regular visits to the estates and peasants' plots, and is in close contact with the planting community. The Land Settlements continue to receive a great deal of the Instructor's attention and the cane nurseries and demonstration plots on the settlements receive his personal attention. These plots are of great value to the allotment holders as they furnish an object lesson in cultivation and care of the crops, and also are a source of supply of suitable planting material for the settlement. The marked improvement in the method of cultivation and care of the crops on the settlements are directly due to these plots.

The Agricultural Instructor is Honorary Secretary of the Agricultural and Commercial Society, which also functions as the local Cotton Growers Association. Six meetings were held during the year and the following were the chief matters discussed: Control of cotton seed for planting; Whole-time officer as Cotton Inspector; Agricultural Aids Bank; Matters relating to the West Indian Sea Island Cotton Association Conference.

Thanks are due and extended to the estate owners and the planting community for their co-operation with the agricultural officers, which greatly facilitated the work of the Department.

OFFICIAL VISITS.

Periodical visits are paid by the Commissioner of Agriculture and members of his staff for the purpose of discussing and advising on local agricultural problems. Regular visits are paid by the Agricultural Superintendent at St. Kitts.

Report of the Agricultural Instructor, Anguilla

For the Period 1st January to 31st December, 1935.

WEATHER CONDITIONS

The total rainfall recorded at the Demonstration Plot in the Valley for the year 1935 was 31.43 inches, which is 11.87 inches less than that of last year. Rain fell on 81 days during the year and the highest fall recorded for any one day was 2.20 inches on May 16th.

The following table shows the monthly rainfall at the Demonstration Plot for the year under review.

Month	Rainfall Inches	No. of day on which rain fell.	Maximum fall Inches	Date
January	3.37	8	1.20	12th
February	1.88	6	0.70	23rd
March	0.46	2	0.40	10th
April	0.16	1	0.16	24th
May	3.46	3	2.20	16th
June	3.90	6	2.10	25th
July	1.45	6	0.60	22nd
August	4.38	11	1.00	27th
September	4.31	12	1.10	1st
October	3.71	10	0.60	19th
November	2.71	8	0.80	20th
December	1.64	8	0.36	18th
Total	31.43	81		

DISTRIBUTION OF SEEDLINGS AND PLANTING MATERIAL.

The planting material distributed to the peasants during the year was as follows:—

Onion	7,500	seedlings
Cabbage	80	„
Tomato	60	„
Yams	400	lbs
Tannia	70	„
Cassava	350	cuttings
Uba Cane	3,000	„

Vegetable seeds were also sold to the peasants.

DEMONSTRATION PLOT.

Onions. The germination of the seed was good. Seedlings were sold locally and also in St. Martin. At the time of the Agricultural Instructor's temporary transfer to St. Kitts the crop looked healthy and was free of insect pests. It was however suffering seriously from drought. The Red variety was tried for the first time.

Other vegetable crops were planted but, as a result of the serious drought, their growth was very poor and yields very disappointing.

THE COTTON INDUSTRY.

26,276 lbs of lint were produced from the 1934-35 crop. This was 8,605 lbs. less than the crop of the previous season.

The planting of the 1935-36 crop was commenced on the 1st August, 1935. The peasants planted a much larger acreage than in 1934 but the plants again suffered from the effects of a serious drought and were badly stunted. The crop is estimated at only 20,000 lbs. of lint. The seed for planting the island's crop was again supplied from Mr. Carter Rey's ginnery where it had been carefully hand picked.

There was no damage to the crop by the cotton leaf worm. Beetles and cutworms were present and were hand picked. The Pink Bollworm was observed in December, but infestation was not high in the early part of the reaping season and the pest did not cause any serious losses.

The seed multiplication plot was again carried on and a plot of land on Mr. Rey's estate at the Valley was planted with seed supplied by the Agricultural Superintendent at St. Kitts.

ANTILLES COTTON.

The yield of cotton from the plot of Antilles Cotton planted at the Cove estate was very poor and it has been decided to abandon the experiment. The increase in the price of sea island cotton and the greater demand for this type of cotton has entirely changed the situation.

The rainfall during the cotton growing season is given below:—

August	4.38 inches
September	4.31 „
October	3.71 „
November	2.71 „
December	1.64 „
January, 1936	2.77 „
Total	19.52 inches

COTTON INSPECTION.

During the year the duties of Cotton Inspector were assigned to the Agricultural Instructor.

GROUND PROVISION CROPS.

Owing to the severe drought practically all of the ground provision crops of the peasants were a complete failure and for some months conditions among the peasantry were serious. The Government rendered assistance by providing work on the roads.

LAND SETTLEMENT SCHEME.

The allotment holders were unable to pay their annual instalments during the year owing to the failure of their crops during the dry weather.

STOCK.

The Government owned pure bred Berkshire boar served twelve sows during the year. The other live stock on the island remained in fair condition.

OFFICIAL VISITS.

During the year visits were paid to the Demonstration Plot by His Excellency the Governor, the Honourable H. Boon, Treasurer, Dr. Stevens, Magistrate, and Mr. R. E. Kelsick, Agricultural Superintendent.

EXPERIMENT STATIONS AND NURSERIES.

SEED AND PLANT DISTRIBUTION.

The following is a list of the planting material distributed from the nurseries in St. Kitts and Nevis:—

PLANTS.

Ornamental and Shade trees	516
Grafted Mangoes (Julie)	36
Grafted Avocados (Pollock)	8
Budded Citrus	3
Papaw	9
Sapodilla	19
Grape	3
Tung Oil (Aleurites fordii)	20
Breadfruit	24

SEEDS, SEEDLINGS AND CUTTINGS.

Sugar-cane, cuttings	470,384
Onion seedlings	349,600
Tomato seedlings	165,250
Egg-plant seedlings	2,160
Sweet Potatoes, cuttings	1,000
Cotton Seed, lbs.	2,390
Yams, lbs.	933
Onion Seed, lbs.	27
Seed Corn, lbs.	24
Peas and Beans, lbs.	10
Vegetable Seeds, pkts.	1,078

SEED AND PLANT INTRODUCTION.

Cuttings of several Hibiscus varieties were obtained from the Commissioner of Agriculture, Trinidad, and from the Department of Agriculture, Barbados.

Tubers of the sweet potato variety Barbados No. 5 were obtained from the Plant Quarantine Station at Trinidad and cuttings of the variety Three Months from the Curator, Montserrat.

Tubers of several varieties of sweet potatoes were sent to the Plant Breeder, New South Wales, at his request.

EXPERIMENTAL WORK WITH SUGAR CANE UNDERTAKEN BY THE DEPARTMENT IN CO-OPERATION WITH THE SUGAR CANE INVESTIGATION COMMITTEE.

Twenty-three experiments with sugar cane, with a total of 867 plots (1/20th and 1/30th acre), were reaped by the Department during the year. These experiments were laid down by the Department in 1933 under the direction of Mr. P. E. Turner, M.Sc., F.I.C., of the Imperial College of Tropical Agriculture and in co-operation with the Sugar Cane Investigation Committee. The results were published in detail in the annual report for 1934 and the following summary of the conclusions arrived at by Mr. Turner has been abstracted from a paper entitled "Recent Investigations on Sugar-Cane and Sugar-Cane Soils in St. Kitts" by P. E. Turner, R. E. Kelsick and G. B. Gregory which has been recently published.*

SUMMARY.

There are recorded in this paper a preliminary series of results obtained from a scheme of field experiments in St. Kitts under the auspices of the Sugar-Cane Investigation Committee in 1933. The more important conclusions to which the yield data give rise under the conditions which obtained are summarised below.

A classification of the sugar areas of the island is included in the paper.

Varieties. Provided that B.2935 is proved to ratoon satisfactorily it is likely to replace the standard variety S.C.12/4 on the dry areas of the lower lands for reaping early in the crop season. P.O.J.2878 gave promising results as a variety for late reaping in an experiment on these areas.

On the wet areas of the lower lands the highest average yield of cane was given by the variety B.H.10(12) and the highest average yield of sugar by B.H.10(12) and B.726.

Methods of Preparatory Cultivation. Close ploughing with cattle gave rise to no greater yield of plant canes than the standard method of preparatory tillage on the dry and wet areas of the lower lands.

Optimum Use of Lime on Acid Soils. Slaked lime (locally burnt) gave rise to an immediate gain in yield of 2½ to 5½ tons to the acre, according to the size of the dressing on a wet area of the upper lands.

Methods of Planting. Close planting in the row led to a serious reduction in yield on a very dry area. No gain in yield resulted from close planting on a moderately wet area.

Supplementary Treatment of Permanured Soils. On the dry areas it may not pay to apply a late dressing of sulphate of ammonia larger than two cwts.

* Tropical Agriculture. Vol. XIII. Nos. 3 & 4.

to the acre. An early light dressing of nitrogen, applied alone, can depress the gain in yield resulting from the late dressing.

Manurial Treatment of Unpenmanured, Upper Lands. An early dressing of sulphate of ammonia, in addition to the customary late dressing, can lead to a very substantial gain in yield of plant canes. Use of potash with the early nitrogen can lead to a further paying gain in yield.

The general tenor of the experimental results on the upper lands suggests that by greater use of inorganic manures:—

(a) yield of plant canes can be largely and inexpensively increased;

(b) low yielding areas at present uneconomic in sugar cane can be taken back into cultivation with advantage;

(c) it may be possible to dispense with the customary long intervals of rest before replanting.

A more intensive and extensive development of sugar-cane cultivation on the well-watered upper lands would serve to mitigate the serious effects on the prosperity of the island, as a whole, which result from periodic droughts on the lower lands.

Conservation of Moisture on the Dry Areas. Experiments are under way to determine whether greater gain would result from the use of megass as a mulching material to conserve soil moisture rather than as the raw material of pen manure.

Yield of plant canes: It appears that there is nothing to choose between a mulch of megass of two inches and of three inches thickness. It is probable that greater benefit is derived by applying the mulch between every row of cane rather than between alternate rows.

Yield of ratoons It seems essential to apply the megass on the soil with minimum delay after reaping the previous crop. Adequate dressings of nitrogen then appear necessary to enable full use of the moisture conserved.

(Abstract ends)

The conservation of soil moisture by the use of a mulch of organic matter is undoubtedly a matter of prime importance to cane growers in the dry areas of St. Kitts. Lack of a sufficient quantity of mulching material will, however, permit the adoption of this practice on only a very small scale. It is estimated that 100,000 bales of megass are distributed by the St. Kitts (Basseterre) Sugar Factory each crop season among the estates supplying canes to the Factory. The maximum amount distributed to any one estate is stated to be from 8,000 to 9,000 bales. For a satisfactory mulch 600 to 700 bales of megass have to be applied on each acre. The larger estates, which receive the maximum quantity of 9,000 bales, would be able to mulch not more than 12 acres of land and the total quantity of megass distributed would only be sufficient to mulch approximately 6 per cent. of the area planted each year. A fairly large gang of labourers will mulch an acre of cane land with baled megass in not less than a week, as the bales have to be thoroughly broken to get the material into suitable condition for mulching.

SUGAR CANE EXPERIMENTS LAID DOWN DURING THE YEAR FOR THE 1935-1937 SEASON.

The following sugar cane experiments were laid down by the Department under the direction of Mr. P. E. Turner, Sugar Cane Agronomist, during the year for reaping in 1937:—

Variety Trials.

Bellevue, Brighton, Cunningham and La Vallee.

Manurial Trials.

Distance of planting in relation to manurial treatment.
Mansion and Canada.

Mulching with megass in relation to manurial treatment.
West Farm and College.

Supplementary treatment of penmanured soils.
Molineux and Needsmust.

Manurial treatment of unpenmanured upper lands.
Belmont and West Farm.

Potash treatment of unpenmanured soils.
Estridge and Buckleys.

Pen manure with artificials versus artificials.
Molineux and Buckleys.

Optimum size of dressing of pen manure.
Stapleton and Douglas.

COTTON SELECTION.

Sixteen progeny rows were planted on 1st March, 1935, with strains selected from the 1934 progeny rows. Germination was good but the weather during March and April was dry and the growth of the plants was not satisfactory.

Flowering began on May 1st and boll-splitting was first observed on June 17th. Selfing of flowers was started in May.

In July a bulk sample of 100 unselfed bolls was taken from each row and the results of the examination of these samples are given below.

Row	Seed Cotton per Boll (grms.)	Lint per Seed (mgs.)	Seed Weight (mgs.)	Ginning per cent.	Lint per Boll (grms.)	No. of Seeds per Boll	No. of Main Axis bolls per Plant	Maximum Lint Length (mm.)
1	2.86	44	125	25.9	0.74	16.9	39	55.1
2	3.00	43	124	25.7	0.77	18.0	33	54.5
3	2.80	42	127	24.6	0.69	16.6	34	55.6
4	3.04	45	122	27.0	0.82	18.3	36	54.3
5	2.84	42	127	25.0	0.71	16.8	36	55.8
6	2.98	43	129	25.2	0.75	17.3	34	54.4
7	2.95	41	129	24.1	0.71	17.3	40	55.3
8	2.90	42	131	24.1	0.70	16.8	39	54.9
9	2.95	43	123	25.9	0.76	17.8	28	54.7
10	2.74	40	127	24.0	0.66	16.4	29	54.6
11	2.78	39	126	23.8	0.66	16.8	27	55.4
12	3.15	40	127	23.7	0.75	18.8	27	55.8
13	3.00	41	122	25.0	0.75	18.4	27	55.2
14	2.97	41	123	25.1	0.75	18.0	31	55.8
15	2.79	41	124	25.1	0.70	16.9	32	57.1
16	2.86	42	122	25.5	0.73	17.5	35	55.2
Means	2.91	42	125	25.0	0.73	17.4	33	55.2

It will be seen that the number of main axis bolls carried by the plants was very low. This was due to very dry weather and consequent poor growth during the vegetative period of the crop. The total rainfall for the three months March to May was only 5.15 inches, just about sufficient to keep the plants alive.

By the selection of non-shedding and high bolling plants it is hoped to effect improvements in the agricultural properties of the St. Kitts strain. Excellent reports have been received from the brokers on the quality of the lint.

SELECTION WORK WITH OTHER CROPS.

The efforts to produce suitable strains of Maize and Egg Plant (Black Beauty) by selection were continued during the year.

CHEMICAL WORK.

Investigations regarding the contents of exchangeable lime and potash of the upper land soils were continued. Potash deficiency of the soils of the higher lands of estates appears to be more prevalent than lime deficiency. It appears that response to liming will probably only be obtained from fields in which the amount of exchangeable or available calcium is very low. The soil of some fields may be unsaturated and show a lime requirement of about two tons per acre of calcium carbonate and yet will not respond to liming. Liming is an expensive operation and a recommendation to use lime should only be given after careful examination of the soil.

AGRICULTURAL EDUCATION.

Lectures in Soil Science and Botany were given to the senior class from the Grammar School. The lectures were given twice a week at the Experiment Station and the work covered the syllabus of the Cambridge School Certificate examination in general science. The examination results have been very satisfactory.

PUBLICATIONS.

The records of work performed by the Department are published in the annual reports and the results of sugar cane experiments are also published in Tropical Agriculture in collaboration with Mr. P. E. Turner.

GENERAL.

On the decrease in the area under sea island cotton the duties of cotton inspection were assigned to officers of the Department and from the 16th May, 1935, duties in connection with the protection of the forest areas of the island were handed over to the Department. The duties of Forestry Officer and Clerk to the Forestry Board were assigned to the Assistant Agricultural Officer without additional remuneration.

SECTION III.

FINANCIAL STATEMENT.

AGRICULTURE.

EXPENDITURE.

	£	s.	d.
Personal Emoluments	1,268	0	2
Travelling and Subsistence Allowances	134	4	2
Experiment Stations	148	0	5
Sugar Cane, Cotton and other Expts.	243	4	8
Apparatus, Chemicals and Books	32	2	0
Contingencies	10	10	9
Destruction of wild cotton	14	16	0
Demonstration Plots (Nevis and Anguilla)	87	3	4
Purchase of Vegetable Seeds	38	2	4
Additional Cotton Inspectors, Nevis	16	0	0
Total	1,992	3	10

REVENUE.

	£	s.	d.
Sale of Plants and Seeds	245	10	3

FORESTRY.

EXPENDITURE.

(Period 1st January to 15th May, 1935).

	£	s.	d.
Personal Emoluments	29	13	7
Inspection expenses	4	8	6
Travelling Allowance to Head Ranger	5	12	1
Total	39	14	2

SECTION IV.

AGRICULTURAL LEGISLATION.

The following Agricultural Legislation was brought into operation during the year:—

An Ordinance to regulate the export of Cotton (St. Christopher and Nevis No. 13 of 1935).

This Ordinance was brought into force on the recommendation of the West Indian Sea Island Cotton Association in order to prevent the accumulation of large unsold stocks of sea island cotton in the United Kingdom. It is similar to the Ordinances passed previously in Antigua and Montserrat.

Ordinances to control the type of baling material used and the supply of cotton seed for planting purposes were drafted during the year but have not yet been passed.

The legislation recorded in the report for 1933 remains unchanged.

APPENDIX I.

REPORT ON THE LAND SETTLEMENT SCHEME IN NEVIS, 1935.

The settlement of the Creole population of the West Indies as cultivating proprietors was one of the recommendations of the West Indian Royal Commission of 1897, but it appears that St. Vincent was the only island in which steps were taken to put into operation a Land Settlement Scheme. The West Indian Sugar Commission of 1929 again made strong recommendations for the adoption of Land Settlement Schemes in all of the West Indian islands and the present efforts in Nevis are the result of these recommendations.

The funds for financing the scheme were provided by a grant of £7,850 from the Colonial Development Fund in April, 1931. £3,925 was obtained as a free grant and the other £3,925 was granted as a loan free of interest for five years, thereafter bearing interest at five per cent and repayable within twenty-five years from the date of the original advance, sinking fund contributions starting in the sixth year.

A Land Settlement Committee was appointed by Government in July, 1930 and submitted its recommendations in a Report dated 10th September, 1930. This report contained recommendations regarding the three estates (Hamilton, Simmons and Vervain and Colqhuhouns) which were considered most suitable for purchase and the probable prices that would have to be paid for them. The report also dealt with many other matters connected with the scheme such as terms of purchase of plots, size of plots, survey, crops, appointment of a Land Officer, provision of a cotton ginnery for ginning peasants' cotton and the establishment of an Agricultural Bank and Agricultural Credit Societies.

Low Ground Estate was purchased in November, 1931, for £1,100 and Hamilton estate for £1,029 in January, 1934. The Low Ground estate was selected by Mr. G. Powell, late Public Works Officer, and Mr. G. B. Gregory, Assistant Agricultural Officer.

In February, 1932, Rules were made governing the sale of Government land to settlers and in April of the same year a Land Board and a Land Officer were appointed. The Land Officer was not a whole time officer, the duties of the post being assigned to a Treasury Officer. Under the rules each applicant is required to make a deposit on taking up the holding and to pay the balance of the value of the land in ten equal instalments. The Land Settlement Committee recommended that the deposit should be twenty per cent. of the value of the holding but, as intending settlers found it impossible to make so high a deposit, the sum to be deposited was subsequently fixed at ten shillings. In St. Vincent a small holder is allowed sixteen years to complete the purchase of his land.

An important recommendation of the Land Settlement Committee was that the lands should be cultivated as directed or forfeited but in the contract of sale no provision was made for enforcing this recommendation. In St. Vincent and Antigua one of the conditions of tenure is that the small holder must carry out the instructions of the Agricultural Officers in the cultivation of his land for a period of years. From an agricultural point of view this condition is of considerable importance.

THE LOW GROUND SETTLEMENT.

Low Ground estate is about 2½ miles in length by about ⅓ mile mean width and extends from the sea up to Pond Hill. The soil of a part of the estate is a very heavy clay and is difficult to work. The lower lands are subject to very dry spells.

On survey this property was found to comprise approximately 493 acres of which 203 acres were suitable for allotment. The middle and upper parts of the estate were subdivided into 69 allotments of about 3 acres each, and 39 house lots of about one-sixth of an acre each along the public road through Brown Hill village. About 290 acres were reserved as pasture.

The allotments were valued as follows: 27 at £12 10. 0. per acre; 23 at £10 8. 4. and 19 at £8 6. 8. The house lots are sold at £5 each.

PARTICULARS OF THE SCHEME.

Total area	493 acres		
Area suitable for allotment ..	203 „		
Area available for pasture ..	290 „		
First cost of estate	£1,100		
Survey expenses	110		
Bank Charges	15		
			£1,225
Estimate of cost of developing estate			
a. Ranger £25 per an. for 10 years ..		£250	
b. Amount allowed for raising plants for distribution, windbreaks etc, £50 per an. for 10 yrs ..		500	
c. Cleaning & fencing pastures and clearing roads		300	
d. Interest		140	£1,190
			£2,415
Estimated Revenue from sale of lots as above and house lots ..			£2,400

Of the sixty-nine allotments sixty have been taken but, I understand, a large amount of instalment arrears are outstanding in respect of these. Excellent work is being done on some of the holdings but many of the holdings are in a very unsatisfactory condition and the allottees have made no progress with the cultivation of their plots. There are about thirteen of these bad plots on the heavy clay lands near the schoolroom at Brown Hill. I appreciate the difficulties of the allottees in cultivating these heavy lands which have been under grass for a considerable time, but I think that the present condition might have been somewhat better if the agricultural operations of the settlers had been under the direction and control of the Agricultural Department.

The plots on this section of the estate need some system of drainage and applications of rough pen manure to get them into a suitable conditon for growing satisfactory crops and some of the allottees have stated that, through lack of funds, they are unable to carry out these very necessary operations. The Agricultural Department has taken over about half an acre of one of the holdings, which was given up, and this is being suitably drained and manured. This plot will be planted in the new cane variety B.2935, which is regarded as the best variety for these dry lands, and it should prove a useful demonstration to the peasants in this section.

The revival of the cotton industry should enable allottees to pay up arrears and to make regular payments of instalments as they become due, but a vigorous policy in connection with the collection of instalments should be adopted and maintained. To allow arrears to accumulate may do considerable harm to the scheme and the Land Officer, who will soon be appointed, should be given definite instructions in this matter. This officer should be required to keep a careful record of the condition of each holding. This record would be examined from time to time by the Agricultural Officer, who, in addition to his regular visits to the settlement, would be able to give special attention to any allottees who were not showing progress in the development of their plots.

The provision of a better water supply and the extension of pasturage facilities are urgently needed on this settlement. Allottees have to obtain water from neighbouring estates, the owners of which exact from them a certain amount of labour for this concession, also the present area (50 acres of sour grass divided into three paddocks) for pasturing stock is not sufficient for the number of animals on the estate during periods of prolonged drought. It is suggested that another 50 acres should be cleared of Acacia and wired so as to provide ample grazing for the stock throughout the year.

One of the Government pure bred Zebu bulls is still stationed at this settlement and I suggest that consideration should now be given to the purchase of a well bred beef producing bull and a pure bred boar.

PLANTING MATERIAL DISTRIBUTED TO THE SETTLEMENT FROM NURSERIES OF THE AGRICULTURAL DEPARTMENT

	1932	1933	1934	1935
Cane Plants	49,950	54,510	84,520	97,135
Onion Seedlings	4,500	33,800	24,300	34,200
Tomato Seedlings	21,700	19,150	27,450	18,200
Cabbage Seedlings	120	240	—	—
Selected Cotton Seed, lb.	10	524	653	980
Yams, lb	—	65	160	245
Seed Corn, lb.	—	19	2	3
Peas and Beans, lb	3	3	2	2
Cassava Cuttings	400	400	—	—
Sweet Potato Cuttings	—	250	—	—
Grafted Mangoes (Julie) plants ..	2	—	—	—
Budded Oranges „ ..	2	—	—	—
Pine Apple Slips	94	—	—	—

RECEIPTS AND EXPENDITURE FOR PERIOD 1933–35.

	Receipts	Expenditure
Pasturage of stock	£78 7 9	
Deposits	58 7 8	
Instalments	187 1 11	
Service of bull	10 0	
Clearing and fencing paddock		£102 12 0
Ranger	..	70 13 0
Agricultural planting material ..	..	99 16 4
Water	..	46 3 3
Roads	..	170 18 7
Persian Ram	..	16 7 6
Incidentals	..	21 19 11
	£346 10 0	£528 10 7

THE HAMILTON SETTLEMENT.

In 1934 the property known as Hamilton was purchased by the Government for land settlement. The estate is situated about one mile to the East of Charlestown and at about 500 to 700 feet above sea level. It comprises approximately 580 acres and the rainfall is good. As was stated previously the price paid for this estate, on which there is a plant, in fair condition, for making muscovado sugar, was £1,029.

Sub-division into allotments of about three acres each was started in March, 1934 and the work on the lands around the estate was completed by June, 1935. Applications for allotments in the high lands were made by several of the peasants and sub-division of this section of the estate is now in progress. Not including the high lands, 128 allotments were laid out and the prices for these are as follows: 42 at £12. 10s. per acre, 31 at £10. 8. 4. and 55 at £8. 6. 8. The settlement is run on similar lines to Low Ground. Of the 128 allotments, 109 have been taken. It should be the policy of the Land Board to sell holdings only to persons of the peasant class.

This estate is being developed rapidly and should soon be a flourishing peasant settlement. The manufacture of muscovado sugar has, no doubt, been a great inducement to the peasant to purchase land at Hamilton, as it not only provides a certain amount of employment but the allottees are also able to have their cane crop manufactured into muscovado sugar for their own use and for sale in the local market. The muscovado plant is not run by the Government but is leased to a private individual.

The Agricultural Department has a four acre demonstration plot and cane nursery at this settlement. From this plot a very large number of cane plants of the best varieties was distributed to peasants in 1935 and it served as a very useful demonstration of the value of correct methods of cultivation and manuring.

An area of about thirty acres has been reserved as pasture. This has been wired and a water supply put in. On account of the rocky nature of the estate the expenditure on making roads to the various holdings has been high.

PLANTING MATERIAL DISTRIBUTED TO THE SETTLEMENT FROM NURSERIES OF THE AGRICULTURAL DEPARTMENT.

	1934	1935
Cane Plants	60,195	355,359
Onion Seedlings	40,800	60,000
Tomato Seedlings	41,250	56,100
Selected Cotton Seed, lb	608	1,529
Yams, lb.	—	384
Seed Corn, lb.	—	18
Peas and Beans, lb	—	5
Grafted Mangoes (Julie) plants ..	7	2

RECEIPTS AND EXPENDITURE FOR THE PERIOD 1934–35

	Receipts	Expenditure
Deposits	£55 0 0	
Pasturage	12 19 9	
Instalments	13 6 0	
Survey Expenses		£297 11 5
Roads		402 3 6
Agricultural Cane Nursery etc.		84 14 7
Water Supply and Buildings		114 14 9
Paddock		37 5 1
Ranger		22 10 0
Incidentals		12 7 10
	£81 5 9	£971 7 2

It will be seen that the expenditure on roads has been very high and further expenditure on these should be carefully considered.

RECOMMENDATIONS.

1. The early appointment of the whole time Land Officer provided for in the 1936 Estimates with a view to the collection of arrears of instalments and to obtain detailed information regarding the condition of each holding at Low Ground.

2. The amendment of the contract of sale of allotments in order to provide for control of work on the plots by the Agricultural Department for a period of years as is done in Antigua and in St. Vincent.

3. The improvement of the water supply and pasturage facilities at Low Ground.

4. Consideration of the purchase of a well bred beef producing bull and a pure bred boar for use on the Settlements.

5. Consideration of the advisability of starting Co-operative Credit Societies at the Hamilton Settlement. Professor Shephard of the Imperial College of Tropical Agriculture to be asked, through the Commissioner of Agriculture, to suggest a form of Society that might be successfully worked at Hamilton.

6. The extension of the Scheme to the Windward side of the island.

(Sgd.) R. E. KELSICK,

Agricultural Superintendent,

20th January, 1936.

APPENDIX II.

GOVERNMENT MARKETING DEPOT, NEVIS.

Report of the Officer-in-Charge (Agricultural Instructor).

The Government packing house was opened for operations on the 12th November and the first shipment was made on the 19th November and the last on the 31st December.

Only tomatoes were handled this season and the total quantity shipped to Canada was 770 crates. An advance of one cent per lb. on exportable tomatoes was made to the growers.

During the season 49 growers supplied tomatoes to the packing house and the total quantity received was 18,944 lb., of which 15,774 lb. were exportable, giving 11.4 per cent. culls, which is 6.5 per cent less than the percentage of culls last season, and is fairly satisfactory. All the shipments were made to St. John and the average net price per lb. to the growers was 2.3 cents.

The following tables show details of shipments and the results of the season's operations.

Date of Shipment.	Weight of Tomatoes exported	Net price per lb.
	lbs.	cents.
November 19th	5,999	3.3
December 3rd	5,997	2.8
December 17th	2,773	2.0
December 31st	1,005	1.3
	15,774	

	Receipts	Expenditure
Net proceeds account sales	£191 3 6	
Packing house expenses		£10 11 8½
Packing material, crates etc.		32 7 11½
Packing house levy		6 8 4
Cold storage		17 2½
Porterage and lighterage		4 0 3
Truckage		12 4
Telegram		3 4
Freight		43 6 7½
Advances on Tomatoes		32 17 3
Bonus to Growers		31 4 9
Amount placed against previous losses ..		28 13 9
	£191 3 6	£191 3 6

APPENDIX III.

PURCHASING OF PEASANTS' COTTON AND GOVERNMENT GINNERY (NEVIS).

Report of the Officer-in-Charge (Agricultural Instructor).

The purchasing of the peasants' cotton was undertaken again this year by the Government. An advance at the rate of 2d. per lb. on clean sea island cotton delivered at the cotton house was made to growers.

The total quantity of cotton purchased was 94,952 lb. of seed cotton and the amount of lint obtained from it was 26,553 lb., which was shipped to the British Cotton Growing Association, Manchester, in 60 bales. The cotton seed was sold to the Spooners Cotton Ginnery, St. Kitts, except a supply of the best which was kept for planting. The cotton was sold without much delay at 1s. 4d. per lb., which allowed a bonus of 1.85d per lb. seed cotton to the peasants after deducting all expenses. The total amount received by peasants for the 1934-35 crop was therefore 3.85d per lb. seed cotton.

The total cost of the undertaking was £1,111. 11. 10 and the receipts from sale of cotton and cotton seed was £1,862. 6. 1., leaving a profit of £750.14.3 to be divided among the peasants at the rate of 1.85 per lb. of seed cotton.

The following shows the details of receipts and expenditure for the season:

	Receipts	Expenditure
Balance to credit on 1.1.35	£ 20 1 0	
Expenses in cotton house		£ 12 5 0
Fire Insurance		6 16 0
Bags		8 15 0
Sundry Supplies		4 6 8
Porterage		12 19 8
Truckage and cartage		3 7 5
Boatage		8 5 4
Warehousing & hire of hand cart ..		2 9 9
Cess and pier dues		49 2 3
Hand picking cotton seed for planting ..		66 9 1
Ginning and baling		110 12 9
Advances on 94,952 lb. seed cotton ..		791 5 2
Interest on advance		9 17 9
Honorarium to Agric. Instructor ..		25 0 0
Sale of cotton seed to Spooners Ginnery ..	71 0 9	
" " " growers	120 9 5	
Petty receipts	3 3	
Net proceeds of 60 bales line shipped to B.C.G.A.	1,650 10 11	
Profit		750 14 3
	£1862 6 1	£1862 6 1

GOVERNMENT GINNERY.

The Government Ginnery started operations on the 13th May and the total quantity of lint ginned was 26,553 lbs. The average percentage of lint for the season was 28.3.

Latitude 17° 20′ N. **METEOROLOGICAL REPORT FOR 1935.** Heights above M.S.L. Barometer 157 feet

Longitude 62° 45′ W. AGRICULTURAL DEPARTMENT, ST. KITTS. Rain Gauge 152 „

Months.	Barometric Pressure reduced to Sea Level, 32° Fahrenheit and corrected for gravity.					Temperatures °F								Vapour Pressure Ins. of Mercury.			Relatlve Humidity per cent.			Inches Rainfall	No. of days on which rain fell.
	9 a.m.	3 p.m.	Mean	High-est	Low-est	Maximum Means	Minimum Means	Maximum Extreme	Minimum Extreme.	Mean for Month	Range for Mouth	Dew Point 9 a.m.	Dew Point 3 p.m.	9 a.m.	3 p.m.	Mean.	9 a.m.	3 p.m.	Mean.		
	Inches																				
January ...	30·023	29·944	29·983	30·113	29·855	80·5	71·0	83	67	75·7	16	66·3	66·2	·656	·650	·653	69·6	66·1	67·8	1·79	12
February ...	30·074	29·978	30·026	30·151	29·961	80·6	71·3	83	69	75·9	14	66·7	66·5	·680	·686	·683	70·0	66·4	68·2	1·87	16
March ...	30·080	30·009	30·044	30·173	29·908	81·1	70·8	83	67	75·9	16	65·0	63·6	·623	·597	·610	64·7	59·6	62·1	1·35	9
April ...	30·017	29·935	29·976	30·056	29·811	83·1	72·0	86	69	77·5	17	68·0	67·5	·689	·683	·686	66·0	63·5	64·7	1·85	8
May ...	30·013	29·936	29·974	30·071	29·890	84·2	75·1	87	72	79·6	15	70·1	70·1	·747	·759	·749	70·0	68·0	69·0	1·95	11
June ...	30·012	29·971	29·991	30·074	29·940	85·3	75·3	87	73	80·3	14	71·2	71·0	·768	·771	·769	69·1	67·5	68·3	3·18	16
July ...	30·030	29·944	29·987	30·093	29·913	85·3	75·6	87	72	80·4	15	73·6	71·2	·836	·854	·845	76·8	67·0	71·9	5·35	19
August ...	29·980	29·922	29·951	30·055	29·854	86·2	75·9	89	72	81·0	17	73·4	72·7	818	·818	·818	73·0	69·2	71·1	5·86	16
September ...	29·982	29·923	29·952	30·045	29·873	85·9	76·4	91	72	81·1	19	70·7	70·9	·851	·776	·814	62·7	68·8	65·7	3·22	21
October ...	29·910	29·869	29·889	30·068	29·803	84·7	75·0	87	69	79·8	18	71·6	72·5	·776	·785	·781	73·7	74·7	74·2	7·60	21
November ...	29·943	29·874	29·980	30·017	29·813	83·5	74·6	85	68	79·0	17	71·9	72·0	·794	·812	·803	76·2	76·5	76·3	5·41	19
December ...	30·021	29·949	29·985	30·079	29·911	82·3	74·0	84	70	78·1	14	72·5	71·5	·815	·756	·786	81·5	72·2	76·8	2·32	17
Means ...	30·007	29·946	29·986			83·5	73·9	86·0	70·0	78·7	17·3	70·0	69·6	·754	·745	·749	71·1	68·3	69·7	41·75	185

RAINFALL RETURN FOR ST. KITTS FOR YEAR 1935.

Station.	January.	February	March	April.	May	June.	July.	August.	September.	October.	November.	December.	Total.
Willets	2·12	3·03	0·87	2·43	2·84	6·38	8·54	6·91	6·16	15·45	12·96	3·93	71·62
Belmont	2·37	2·63	1·15	1·95	3·94	7·74	7·91	8·00	5·73	14·17	9·95	3·02	68·56
Parsons	1·92	2·37	1·38	3·81	2·63	1·79	7·18	6·74	5·47	13·14	11·99	3·56	61·98
Molineux	3·47	3·06	1·42	1·41	3·69	3·82	5·93	4·16	6·64	15·02	9·23	3·25	61·10
Brothersons ..	2·	1·80	1·10	2·04	4.29	6·03	7·65	6·00	4·50	12·52	9·57	2·37	60·45
Lodge	5·27	3·39	1·33	1·35	2·59	3·46	5·98	3·59	6·84	14·25	7·10	3·32	58·47
Belle Vue	3·73	2·82	1·19	2·34	3·40	1·89	5·69	5·12	5·54	12·58	10·37	3·07	57·74
Fountain	3·77	3·54	1·58	1·60	2·27	3·58	4·27	6·91	3·93	9·80	9·28	6·47	57·00
Wingfield	5·10	2·91	1·75	2·19	4·77	4·48	7·06	5·77	5·01	8·85	6·22	2·76	56·87
Caines	2·37	2·20	1·34	3·05	1·30	3·35	6·84	4·75	5·41	11·44	10·74	3·41	56·20
Brighton	6·63	2·47	1·55	2·13	2·43	2·92	5·17	3·30	6·29	13·21	5·76	3·34	55·20
Lower Bourryeau	3·70	2·45	1·43	1·48	2·83	2·69	4·93	4·46	6·25	14·32	7·84	2·65	55·03
Estridge	3·47	2·18	1·38	2·10	3·07	2·84	6·27	4.85	6·36	12·19	6·55	3·69	54·95
Con Phipps ...	4·17	2·39	2·40	1·11	4·47	4·89	6·33	6·26	5·45	9·08	4·42	2·88	53·85
Mansion	3·85	2·78	1·00	1·44	2·74	2·38	5·76	4·46	5·37	13·40	8·30	1·98	53·46
Bourkes	4·06	2·29	2·06	0·85	3·51	4·59	5·1 8	5·35	5·31	13·28	4·15	2·40	53·03
Mills	3·11	2·04	1·42	1·63	2·46	2·38	4·90	3·77	6·11	13·58	8·06	2·35	51·81
Cranstouns ...	2·55	2·35	1·30	0·50	3·28	4·31	2·91	6·75	5·16	12·17	7·49	3·03	51·80
Stapleton	3·27	1·23	0·52	0·59	1·44	2·50	5.75	6·77	3·96	14·89	7·87	1·72	50·51
Hermitage ...	3·61	3·71	1·37	1·36	3·05	2·47	5·06	2·37	5·32	12·94	3·99	3·78	49·03
La Vallee	2·57	1·17	1·28	0·99	3·41	4·94	3·42	4·14	5·23	11·03	5·15	1·97	45·30
Farm	3·25	0·95	2·47	0·50	3·25	3·15	5·26	5·50	4·70	7·95	5·10	2·22	44·30
Sir Gillies	4·50	2·25	2·13	0·55	4·18	3·80	3·15	4·40	3·43	4·45	6·45	3·78	43·07
Shadwell	3·23	2·36	1·35	1·73	1·82	2·09	5·06	5·02	3·33	6·67	7·25	2·39	42·30
Stone Fort ...	2·77	2·78	1·45	1·01	3·24	2·53	6·32	3·67	4·17	7·11	3·80	3·23	42·08
West Farm ...	2·93	2·18	1·38	1·03	1.83	3·35	5·49	4·97	3·59	8·84	3·91	2·50	42·00
La Guerite ...	1·79	1·87	1·35	1·85	1·95	3·18	5·35	5·86	3·22	7·60	5·41	2·32	41·75
Needsmust ...	2·90	1·45	1·25	0·70	2·10	2·75	4·50	4·85	3·70	3·55	10·4	3 50	41·65
College	0·95	1·00	1·45	2·45	0·90	1·95	5·45	5·22	3·73	9·29	5·30	3·29	40·98
Pond	2·52	1·32	1·93	1·67	2·00	2·45	3·14	6·39	2·04	3·65	9·60	3·60	40·31
Cunningham ...	3·22	2·20	0·69	0·87	1·19	1·80	4·82	2·81	3·51	11·37	5·86	1·85	40·19
Douglas	2·70	2·30	1·00	1·10	1·35	2·40	4·10	4·60	3·00	8·55	5·65	3·25	40·00
Olivees	2·66	2·19	1·20	1·80	1·85	2·48	4·42	4·66	3·14	7·66	5·85	1·47	39·38
Frigate Bay ...	1·12	2·16	1·36	1·07	1·95	3·13	4·75	3·70	3·89	8·53	5·84	1·74	39·24
[illegible]	2·76	1·23	1·03	0·80	1·00	2·60	4·76	4·03	3·14	8·11	5·57	1·76	38·26

AVERAGE RAINFALL 1914—1935.

In 1914 the average rainfall on		31	Stations was	52.92 in.
1915	„	32	„	75.59 „
1916	„	35	„	69.51 „
1917	„	33	„	43.53 „
1918	„	30	„	52.44 „
1919	„	29	„	62.84 „
1920	„	28	„	37.13 „
1921	„	29	„	47.09 „
1922	„	33	„	44.84 „
1923	„	30	„	34.58 „
1924	„	28	„	68.13 „
1925	„	32	„	43.54 „
1926	„	27	„	62.57 „
1927	„	29	„	64.36 „
1928	„	29	„	53.25 „
1929	„	28	„	52.55 „
1930	„	31	„	45.98 „
1931	„	31	„	57.60 „
1932	„	33	„	77.27 „
1933	„	36	„	63,97 „
1934	„	38	„	55.34 „
1935	„	39	„	48.89 „

The average rainfall for 22 years is 55.17 inches, so that the rainfall for the year 1935 is 6.28 inches below the average.

AVERAGE MONTHLY RAINFALL.

	1935.	1914—1935.
	Inches.	Inches.
January	3.06	3.27
February	2.21	2.00
March	1.37	2.49
April	1.49	3.77
May	2.55	4.00
June	3.25	4.09
July	5.27	5.23
August	4.97	5.37
September	4.58	6.32
October	10.36	6.42
November	6.95	7.30
December	2.83	4.58

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METEOROLOGICAL RETURN

EXPERIMENT STATION, NEVIS.

1935 Month	Rainfall Inches	No. of days on which rain fell.	Maximum fall for any one day.
January	2.27	6	0.62 (4th)
February	2.04	9	0.40 (27th)
March	1.81	8	0.41 (11th)
April	2.20	8	1.15 (29th)
May	1.90	11	0.42 (16th)
June	2.45	8	0.88 (25th)
July	4.39	12	1.23 (22nd)
August	5.18	10	1.21 (17th)
September	3.91	10	1.16 (14th)
October	7.83	16	1.30 (14th)
November	7.46	14	1.10 (2nd)
December	3.09	6	0.90 (14th)
	44.53	118	

The average rainfall for the past thirty years is 47.59 inches.

TEMPERATURE.

Readings of the Maximum and Minimum and the Wet and Dry bulb thermometers are taken daily at the station at 9 a.m. and at 3 p.m. The mean temperature for the year was 81.9 F. The mean maximum temperature was 84.8 F. and the mean minimum 72.7 F.

The highest maximum was 89°F. registered on Sept. 24th, Oct. 8th and Nov. 13th and the lowest minimum 62°F. on March 8th and April 10th. The mean monthly range was 11.6 F.

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